UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,260	10/24/2003	David Akopian	915-007.051	9082

4955 7590 01/12/2007

WARE FRESSOLA VAN DER SLUYS &
ADOLPHSON, LLP
BRADFORD GREEN, BUILDING 5
755 MAIN STREET, P O BOX 224
MONROE, CT 06468

EXAMINER	
BAYARD, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,260	AKOPIAN, DAVID	
	Examiner	Art Unit	
	Emmanuel Bayard	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the last line "for publication: figure 2" must be deleted. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-Xxaortr are rejected under 35 U.S.C. 102(e) as being anticipated by Qin U.S. Patent No 6,865,172 B1.

As per claim 1, Qin teaches a method for determining the code phase between a code modulated signal (21) received at a receiver and an available replica code sequence, said method comprising: performing a multiplication (25) (see fig.3 element 31) between samples of a first vector (23) (see fig.3 element 36) and samples of a

second vector (24) (see fig.3 element 37) resulting in a third vector (26) (see fig.3 element 38), which first vector (23) is generated based on said received code modulated signal (21) in an operation including a time to frequency transform (22) (see fig.3 element 30a) and which second vector (24) is generated based on said replica code sequence in an operation including a time to frequency transform (see col.2, lines 65-67 and col.3, lines 1-10 and col.4, lines 25 and col.5, lines 24-25 and col.6, lines 5-13); dividing said third vector (26) (see fig.3 elements 32-33) into sections (29) and summing (30) the samples in each section (29) (see col.6, lines 23-25); forming a reduced fourth vector (31) out of the summed samples (see fig.3 element 39 and col.6, lines 30-35); and performing a frequency to time transform (27) (see fig.3 element 34) of said fourth vector (31) resulting in a fifth vector (28), each sample of said fifth vector (28) representing a correlation value for a different code phase (see col.4, lines 5-10 and col.5, lines 26-27 and col.6, lines 9-25).

As per claim 2, Qin teaches wherein said multiplication (25) between samples of said first vector (23) and samples of said second vector (24) is realized as point wise multiplication (see fig.3 element 31).

As per claim 3, Qin teaches wherein said multiplication between samples of said first vector and samples of said second vector is realized as element-wise multiplication (see fig.3 element 31).

As per claim 4, Qin teaches wherein the number of said sections (29) is selected based on an available information on a range of code phases which are possible in a current situation (see abstract and col.4, lines 5-25).

As per claim 5 Qin inherently teaches wherein the number of said sections (29) is selected to be equal to or larger than the number of code phases in said range.

As per claim 6, Qin teaches wherein said range of code phases is determined based on available information on a position of said receiver (see col.4, lines 36-45).

As per claim 7, Qin inherently teaches wherein said sections (29) are of equal size.

As per claim 8, Qin teaches, wherein said code modulated signal is correlated with a plurality of identical replica code sequences, which are shifted in phase (see col.4, lines 5-67 and col.6, lines 17-35).

As per claim 9, Qin inherently teaches further comprising a subsequent coherent and/or noncoherent processing for handling signals of low strength.

As per claim 10, Qin, teaches wherein said first vector (23) is obtained by performing a time to frequency transform (22) of said received code modulated signal (21), and wherein said second vector (24) is given by a vector resulting in a time to frequency transform of the inverted conjugate of said replica code sequence (see fig.3 and col.5-col.6).

As per claim 11, Qin teaches wherein said first vector is obtained by performing a time to frequency transform of said received code modulated signal, and wherein said second vector is given by the conjugate of a vector resulting in a time to frequency transform of said replica code sequence (see col.5-col.6 and fig.3).

As per claim 12, Qin, teaches wherein said first vector is given by a vector resulting in a time to frequency transform of the inverted conjugate of said received

code modulated signal, and wherein said second vector is obtained by performing a time to frequency transform of said replica code sequence (see col.5-col.6 and fig.3).

As per claim 13, Qin teaches wherein said first vector is given by the conjugate of a vector resulting in a time to frequency transform of said received code modulated signal, and wherein said second vector is obtained by performing a time to frequency transform of said replica code sequence (see fig.3).

As per claim 14, Qin, teaches inherently wherein said time to frequency transforms are realized as FFT is functionally equivalent to the claimed (Discrete Fourier Transforms) (see col.5, lines 23-27).

As per claim 15, Qin teaches wherein said time to frequency transforms are realized as Fast Fourier Transforms (see col.5, lines 23-27).

As per claim 16, Qin, inherently teaches wherein said frequency to time transform is realized as IFFT is functionally equivalent to the claimed (Inverse Discrete Fourier Transform) (see col.5, lines 23-27).

As per claim 17, Qin, teaches wherein said code modulation of said received code modulated signal is a Code Division Multiple Access (CDMA) spread spectrum modulation (see col.2, lie 55-60).

As per claim 18, Qin teaches in a process for acquisition and/or tracking of code modulated signals received at a receiver (see col.2, lines 40-45).

As per claim 19, Qin a receiver comprising receiving means for receiving code modulated signals; and processing means for carrying out the method according to claim 1 (see figs. 2-3).

As per claim 20, Qin teaches which receiver is a receiver of a positioning system (see fig.1 and col.5, lines 36-44).

As per claim 21, Qin inherently teaches an electronic device comprising a receiver according to claim 19.

As per claim 22, Qin inherently teaches wherein said electronic device is a mobile terminal capable of communicating with a communication network (see fig.1 and col.5, lines 36-44).

As per claim 23, Qin teaches a device comprising means for receiving from a receiver information on code modulated signals received by said receiver; and processing means for carrying out the method according to claim 1 (see figs. 2-3).

As per claim 24, Qin teaches a device according to claim 23, which device is a network element of a network (see fig.1).

As per claim 25, Qin teaches a system comprising a receiver comprising means for receiving code modulated signals, and means for providing information on received code modulated signals; and a device according to claim 23 (see fig.2).

As per claim 26, Qin teaches a system comprising a receiver according to claim 19; and a device for providing assistance data to said receiver (see fig.2).

As per claim 27, Qin teaches a system according to claim 26, wherein said device is a network element of a network (see fig.1).

As per claim 28, Qin inherently teaches a system according to claim 25, wherein said system is a positioning system.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sato U.S. Patent No 6,778,591 teaches a path search circuit.

Kleider et al U.S. Patent No 6,487,252 B1 teaches a wireless communication system.

Blanchard et al U.S. patent No 5,629,929 teaches an apparatus for rapid interference.

Yamaguchi U.S. patent No 5,802,012 teaches synthetic aperture sonar.

Pouttu U.S.Patent No 6,606,348 B1 teaches a receiving method.

Zhengdi U.S. Patent No 5,706,275 teaches a data transmission method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emmanuel Bayard
Primary Examiner
Art Unit 2611

1/3/07

EMMANUEL BAYARD
PRIMARY EXAMINER